

Fig. 1A

Peniophora numbers	1	37
Alignment numbers	1	50
P_involtus_A1	.....ML FGFVALACLL SLSEVLATSV P.....KNT APTFPIPESE	
P_involtus_A2	.....MH LGFVTLACLI HLSEVFAASV P.....RNI APKFSIPESE	
T_pubescens	.....MAFSILASLL FVCYAYARAV PRAHIPLRDT SACLDVTRDV	
A_pediades	.....MSLFIGGCLL VFLQASAYGG VVQATFVQPF .....FPPQI	
P_lycii	.....MV SSAFAPSILL SLMSSLALST QFSF.....V AAQLPIPAQN	
A_fumigatus	.....MVTL TFLLSAAYLL .SGRVSAAPS SAGSKSCDTV DLGYQCSPAT	
consphyA	.....MGVF VVLLSIATLF GSTSGTALGP RGNSHSCDTV DGGYQCFPEI	
A_nidulans	.....MAFF TVALSLYLL ..SRVSAQAP VVQNHSCNTA DGGYQCFPNV	
A_ficuum_NRRL3135	.....MGVS AVLLPLYLLS GVTSGLAVPA SRNQSSCDTV DQGYQCFSET	
A_terreus	.....MGFL AIVLSVALLF RSTSGTPLGP RGKHSDCNSV DHGYQCFPEL	
T_thermo	.....MSLL LLVLSGGLVA LYVS...RNP HVDSHSCNTV EGGYQCRPEI	
T_lanuginosa	MAGIGLGSFL VLLLQFSALL TASPAPPPFW RKKHPNVD.. .....I	
M_thermophila	.....MTGL GVMVMVGFL AIASL..... QSESRPCDTP DLGFQCGTAI	
	38	83
	51	100
P_involtus_A1	QRNWSPYSPY FPLAEYKA.. ..PPAGCQIN QVNIIQRHGA RFPTSGATTR	
P_involtus_A2	QRNWSPYSPY FPLAEYKA.. ..PPAGCEIN QVNIIQRHGA RFPTSGAATR	
T_pubescens	QQSWSMYSPY FPAATYVA.. ..PPASCQIN QVHIIQRHGA RFPTSGAAKR	
A_pediades	QDSWAAYTPY YPVQAYTP.. ..PPKDCKIT QVNIIQRHGA RFPTSGAGTR	
P_lycii	TSNWGPYDPF FPVEPYAA.. ..PPEGCTVT QVNLIQRHGA RWPTSGARSR	
A_fumigatus	SHLWGQYSPF FSLEDELSVS SKLPKDCRIT LVQVLSRHGA RYPTSSKSKK	
consphyA	SHLWGQYSPF FSLEDESAIS PDVPDDCRVT FVQVLSRHGA RYPTSSKSKA	
A_nidulans	SHVWGQYSPY FSIEQESAIS EDVPHGCEVT FVQVLSRHGA RYPTESKSKA	
A_ficuum_NRRL3135	SHLWGQYAPF FSLANESVIS PEVPAGCRVT FAQVLSRHGA RYPTDSKGKK	
A_terreus	SHKWGLYAPY FSLQDESPFP LDVPEDCHIT FVQVLSRHGA RSPTHSKTKA	
T_thermo	SHSWGQYSPF FSLADQSEIS PDVPQNCKIT FVQLLSRHGA RYPTSSKTEL	
T_lanuginosa	ARHWGQYSPF FSLAEVSEIS PAVPKGCRVE FVQVLSRHGA RYPTAHKSEV	
M_thermophila	SHFWGQYSPY FSVP..SELD ASIPDDCEVT FAQVLSRHGA RAPTLKRAAS	
	84	133
	101	150
P_involtus_A1	IKAGLTKLQG VQNFTDAKEN FIKSFKYDLG NSDLVPFGAA QSFDAQGEAF	
P_involtus_A2	IKAGLSKLQS VQNFTDPKFD FIKSFTYDLG TSDLVPFGAA QSFDAGLEVF	
T_pubescens	IQTAVAKLKA ASNYTDPLLA FVTNYTYSLG QDSLVELGAT QSSEAGQGEAF	
A_pediades	IQA AVKKLQS AKTYTDPRLD FLTNYTYTLG HDDLVPFGAL QSSQAGEETF	
P_lycii	QVA AVAKIQM ARPFTDPKYE FLNDFVYKFG VADLLPFGAN QSHQTGTDMY	
A_fumigatus	YKKLVTAIQA NATDFKGKFA FLKTYNYTLG ADDLTPFGEQ QLVNSGIKFY	
consphyA	YSALIEAIQK NATAFKGKYA FLKTYNYTLG ADDLTPFGEN QMVNSGIKFY	
A_nidulans	YSGLIEAIQK NATSFWGQYA FLESYNYTLG ADDLTIFGEN QMVDSGAKFY	
A_ficuum_NRRL3135	YSALIEEIQQ NATTFDGKYA FLKTYNYSLG ADDLTPFGEQ ELVNSGIKFY	
A_terreus	YAATIAAIQK SATAFPGKYA FLQSYNYSLD SEELTPFGRN QLRDLGAQFY	
T_thermo	YSQLISRIQK TATAYKGYA FLKDYRYQLG ANDLTPFGEN QMIQLGIKFY	
T_lanuginosa	YAE LLQRIQD TATEFKGDFA FLRDYAYHLG ADNLTRFGEE QMMESGRQFY	
M_thermophila	YVDLIDRIHH GAISYGPGEY FLRTYDYLTLG ADELTRTGQQ QMVNSGIKFY	

Fig. 1B

	134				176
	151				200
P_involtus_A1	ARYSKLVSKN	NLPFIRADGS	DRVVDSATNW	TAGFASA...	....SHNTVQ
P_involtus_A2	ARYSKLVSSD	NLPFIRSDGS	DRVVDATATNW	TAGFASA...	....SRNAIQ
T_pubescens	TRYSSLVSAD	ELPFVRASGS	DRVVATANNW	TAGFALA...	....SSNSIT
A_pediades	QRYSFVLSKE	NLPFVRASSS	NRVVDSATNW	TEGFSAA...	....SHHVLN
P_lycii	TRYSTLFEGG	DVPFVRAAGD	QRVVDSSTNW	TAGFGDA...	....SGETVL
A_fumigatus	QRYKAL.ARS	VVPFIRASGS	DRVIASGEKF	IEGFQQAkla	DPGA.TNRAA
consphyA	RRYKAL.ARK	IVPFIRASGS	DRVIASAEKF	IEGFQSAkla	DPGSQPHQAS
A_nidulans	RRYKNL.ARK	NTPFIRASGS	DRVVASAEKF	INGFRKAQLH	DHGS..KRAT
A_ficuum_NRRL3135	QRYESL.TRN	IVPFIRSSGS	SRVIASGKKF	IEGFQSTKLK	DPRAQPGQSS
A_terreus	ERYNAL.TRH	INPFVRATDA	SRVHESAEKF	VEGFQTARQD	DHHANPHQPS
T_thermo	NHYKSL.ARN	AVPFVRCSGS	DRVIASGRLE	IEGFQSAKVL	DPHSDKHDAP
T_lanuginosa	HRYREQ.ARE	IVPFVRAAGS	ARVIASAEFF	NRGFQDAKDR	DPRSNDQDAE
M_thermophila	RRYRAL.ARK	SIPFVRTAGQ	DRVVHSAENF	TQGFHSALLA	DRGSTVRPTL
	177				217
	201				250
P_involtus_A1	PKLNLILPQT	G..NDTLEDN	MCPAAGD...	...SDPQVNA	WLAVAFPSIT
P_involtus_A2	PKLDLILPQT	G..NDTLEDN	MCPAAGE...	...SDPQVDA	WLASAFPSVT
T_pubescens	PVLSVIISEA	G..NDTLDDN	MCPAAGD...	...SDPQVNO	WLAQFAPPMT
A_pediades	PILFVILSES	L..NDTLDDA	MCPNAGS...	...SDPQTGI	WTSIYGTPIA
P_lycii	PTLQVVLQEE	G..NCTLCNN	MCPNEVD...	...GD.ESTT	WLGVFAPNIT
A_fumigatus	PAISVIIPES	ETFNNTLDHG	VCTKFEA...	SQLGDEVAAN	FTALFAPDIR
consphyA	PVIDVIIPEG	SGYNNTLDHG	TCTAFED...	SELGDDVEAN	FTALFAPAIR
A_nidulans	PVVNVIIPEI	DGFNNTLDHS	TCVSFEN...	DERADEIEAN	FTAIMGPPIR
A_ficuum_NRRL3135	PKIDVVISEA	SSSNNTLDPG	TCTVFED...	SELADTVEAN	FTATFVPSIR
A_terreus	PRVDVAIPEG	SAYNNTLEHS	LCTAFES...	STVGDDAVAN	FTAVFAPAIA
T_thermo	PTINVIIIEG	PSYNNTLDTG	SCPVFED...	SSGGHDAQEK	FAKQFAPAIL
T_lanuginosa	PVINVIIIEE	TGSNNTLDGL	TCPAAEE...	AP.DPTQPAE	FLQVFGPRVL
M_thermophila	PYDMVVIPEI	AGANNTLHND	LCTAFEEGPY	STIGDDAQDT	YLSTFAGPIT
	218				252
	251				300
P_involtus_A1	ARLNAAAPSV	NLTDTDAFNL	VSLCAFLTVS	KEKK.....	.....S
P_involtus_A2	AQLNAAAPGA	NLTDAFNL	VSLCPFMTVS	KEQK.....	.....S
T_pubescens	ARLNAGAPGA	NLTDTDTYNL	LTLCPFETVA	TERR.....	.....S
A_pediades	NRLNQAPGA	NITAADVSNL	IPLCAFETIV	KETP.....	.....S
P_lycii	ARLNAAAPSA	NLSDSDALT	MDMCPFDLTS	SGNA.....	.....S
A_fumigatus	ARAEKHLPGV	TLTDEDVVSL	MDMCSFDTVA	RTSD..ASQ.	.....LS
consphyA	ARLEADLPGV	TLTDEDVVYL	MDMCPFETVA	RTSD..ATE.	.....LS
A_nidulans	KRENDLPGI	KLTNENVIYL	MDMCSFDTMA	RTAH..GTE.	.....LS
A_ficuum_NRRL3135	QRENDLSGV	TLTDEVTYTL	MDMCSFDTIS	TSTV..DTK.	.....LS
A_terreus	QREADLPGV	QLSTDDVVNL	MAMCPFETVS	LTDD..AHT.	.....LS
T_thermo	EKIKDHLPGV	DLAVSDVPYL	MDLCPFETLA	RNHT..DT..	.....LS
T_lanuginosa	KKITKHMPGV	NLTLEDVPLF	MDLCPFDTVG	SDPVLFPQRQ.	.....LS
M_thermophila	ARVNANLPGA	NLTADTVAL	MDLCPFETVA	SSSSDPATAD	AGGGNGRPLS

Fig. 1C

	253				300
	301				350
P_involtus_A1	DFCTLFEGIP	GSFEAFAYGG	DLDKFYGTGY	GQELGPVQGV	GYVNELIARL
P_involtus_A2	DFCTLFEGIP	GSFEAFAYAG	DLDKFYGTGY	GQALGPVQGV	GYINELLARL
T_pubescens	EFCDIYEELQ	AE.DAFAYNA	DLDKFYGTGY	GQPLGPVQGV	GYINELIARL
A_pediades	PFCNLFT..P	EEFAQFEYFG	DLDKFYGTGY	GQPLGPVQGV	GYINELLARL
P_lycii	PFCDLFT..A	EEYVSYEYYY	DLDKYYGTGP	GNALGPVQGV	GYVNELLARL
A_fumigatus	PFCQLFT..H	NEWKKYNYLQ	SLGKYYGYGA	GNPLGPAQGI	GFTNELIARL
consphyA	PFCALFT..H	DEWRQYDYLQ	SLGKYYGYGA	GNPLGPAQGV	GFANELIARL
A_nidulans	PFCAIFT..E	KEWLQYDYLQ	SLSKYYGYGA	GSPLGPAQGI	GFTNELIARL
A_ficuum_NRRL3135	PFCDLFT..H	DEWINYDYLQ	SLKKYYGHGA	GNPLGPTQGV	GYANELIARL
A_terreus	PFCDLFT..A	TEWTQYNYLL	SLDKYYGYGG	GNPLGPVQGV	GWANELMARL
T_thermo	PFCALST..Q	EEWQAYDYYQ	SLGKYYGNNG	GNPLGPAQGV	GFVNELIARM
T_lanuginosa	PFCHLFT..A	DDWMAYDYYY	TLDKYYSHGG	GSAFGPSRGV	GFVNELIARM
M_thermophila	PFCRLFS..E	SEWRAYDYLQ	SVGKWWYGYGP	GNPLGPTQGV	GFVNELLARL
	301				349
	351				400
P_involtus_A1	TNS.AVRDNT	QTNRTLDASP	VTFPLNKTFY	ADFSHDNLMV	AVFSAMGLFR
P_involtus_A2	TNS.AVNDNT	QTNRTLDAAP	DTFPLNKTMV	ADFSHDNLMV	AVFSAMGLFR
T_pubescens	TAQ.NVSDHT	QTNSTLDSSP	ETFPLNRTLY	ADFSHDNQMV	AIFSAMGLFN
A_pediades	TEM.PVRDNT	QTNRTLDSSP	LTFPLDRSIY	ADLSHDNQMI	AIFSAMGLFN
P_lycii	TGQ.AVRDET	QTNRTLDSDP	ATFPLNRTFY	ADFSHDNTMV	PIFAALGLFN
A_fumigatus	TRS.PVQDHT	STNSTLVSNP	ATFPLNATMY	VDFSHDNSMV	SIFFALGLYN
consphyA	TRS.PVQDHT	STNHTLDSNP	ATFPLNATLY	ADFSHDNSMI	SIFFALGLYN
A_nidulans	TQS.PVQDNT	STNHTLDSNP	ATFPLDRKLY	ADFSHDNSMI	SIFFAMGLYN
A_ficuum_NRRL3135	THS.PVHDDT	SSNHTLDSSP	ATFPLKSTLY	ADFSHDNGII	SILFALGLYN
A_terreus	TRA.PVHDHT	CVNNTLDASP	ATFPLNATLY	ADFSHDSNLV	SIFWALGLYN
T_thermo	THS.PVQDYT	TVNHTLDSNP	ATFPLNATLY	ADFSHDNTMT	SIFAALGLYN
T_lanuginosa	TGNLPVKDHT	TVNHTLDNDP	ETFPLDAVLY	ADFSHDNTMT	GIFSAMGLYN
M_thermophila	A.GVPVRDGT	STNRTLDGDP	RTFPLGRPLY	ADFSHDNDMM	GVLGALGAYD
	350			383	
	401				450
P_involtus_A1	QPAPLSTSV	NPWR.....T	WRTSSLVPFS	GRMVVERLSC	.....
P_involtus_A2	QSAPLSTSTP	DPNR.....T	WLTSSVVPFS	ARMAVERLSC	.....
T_pubescens	QSAPLDPTTP	DPAR.....T	FLVKKIVPFS	ARMVVERLDC	.....
A_pediades	QSSPLDPSFP	NPKR.....T	WVTSRLTPFS	ARMVTERLLC	QRDGTGSGGP
P_lycii	ATA.LDPLKP	DENR.....L	WVDSKLVVFS	GHMTVEKLAC	.....
A_fumigatus	GTEPLSRTSV	ESAKE..LDG	YSASWVVPFG	ARAYFETMQC	.....
consphyA	GTAPLSTTSV	ESIEE..TDG	YSASWTVVFP	ARAYVEMMQC	.....
A_nidulans	GTQPLSMDSV	ESIQE..MDG	YAASWTVVFP	ARAYFELMQC	.....
A_ficuum_NRRL3135	GTKPLSTTTV	ENITQ..TDG	FSSAWTVVFP	SRLYVEMMQC	.....
A_terreus	GTAPLSQTSV	ESVSQ..TDG	YAAAWTVVFP	ARAYVEMMQC	.....
T_thermo	GTAKLSTTEI	KSIEE..TDG	YSAAWTVVFP	GRAYIEMMQC	.....
T_lanuginosa	GTKPLSTSKI	QPPTGAAADG	YAASWTVVFP	ARAYVELLRC	ETETSSEEEE
M_thermophila	GVPPLDKTAR	RDPEE..LGG	YAASWAVVFP	ARIYVEKMRC	SGGGGGGGGG

Fig. 1D

		384		425
	451			500
P_involtus_A1	.....FGT	TKVRVLVQDQ	VQPLEFCGGD	RNGLCTLAKF VESQTFARSD
P_involtus_A2	.....AGT	TKVRVLVQDQ	VQPLEFCGGD	QDGLCALDKF VESQAYARSG
T_pubescens	.....GGA	QSVRLLVNDA	VQPLAFCGAD	TSGVCTLDAF VESQAYARND
A_pediades	SRIMRNGNVQ	TFVRILVNDA	LQPLKFCGGD	MDSLCTLEAF VESQKYARED
P_lycii	.....SGK	EAVRVLVNDA	VQPLEFCGG.	VDGVCELSAF VESQTYAREN
A_fumigatus	K..S...EKE	PLVRALINDR	VVPLHGCDVD	KLGRCKLNDF VKGLSWARSG
consphyA	Q..A...EKE	PLVRVLVNDR	VVPLHGCAVD	KLGRCKRDDF VEGLSFARSG
A_nidulans	E.....KKE	PLVRVLVNDR	VVPLHGCAVD	KFGRCTLDDW VEGLN FARSG
A_ficuum_NRRL3135	Q..A...EQA	PLVRVLVNDR	VVPLHGCPVD	ALGRCTRDSF VRGLSFARSG
A_terreus	R..A...EKE	PLVRVLVNDR	VMPLHGCPVD	KLGRCKRDAF VAGLSFAQAG
T_thermo	D..D...SDE	PVVRVLVNDR	VVPLHGCEVD	SLGRCKRDDF VRGLSFARQG
T_lanuginosa	E..G...EDE	PFVRVLVNDR	VVPLHGCRVD	RWGRCCRDEW IKGLTFARQG
M_thermophila	E..GRQEKDE	EMVRVLVNDR	VMTLKGCCGAD	ERGMCTLERF IESMAFARGN
		426	439	
	501		514	
P_involtus_A1	GAGDFEKCFA	TSA.		
P_involtus_A2	GAGDFEKCLA	TTV.		
T_pubescens	GEGDFEKCFA	T...		
A_pediades	GQGD FEKCFD	....	
P_lycii	GQGDFAKCGF	VPSE		
A_fumigatus	..GNWGE CFS	....	
consphyA	..GNWAE CFA	*...		
A_nidulans	..GNWKT CFT	L...		
A_ficuum_NRRL3135	..GDWAE CFA	....	
A_terreus	..GNWAD CF.	....	
T_thermo	..GNWEG CYA	ASE.		
T_lanuginosa	..GHWDR CF.	....	
M_thermophila	..GKWDL CFA	....	

Fig. 2

AAGCTTGGGCAAACATCATGCTCATCTTGATGATTCCACTGTTTCTAGCTACCTGGCTGCTGCTTCTCTGGGGTTCATC 80
 HindIII M L I L M I P L F S Y L A A A S L
 CTTTGGCCCTGTCTCGATGTTAAATACTAAACATATTTACCGAGCGTGTACTCTCCCCTCAGCCAGTGTCTGTGACA 160
 R V L S P Q P V S C D
 GCGCGGAGCTTGGTTACCAATGCGACCAGCAGACAACGCACACCTGGGGTCAATACTCACCTTCTTCTGTCTCCGTC 240
 S P E L G Y Q C D Q Q T T H T W G Q Y S P F F S V P S
 GAGATCTCCCCTTCCGTTCCTGATGGCTGCCCTCACCTTCGCCCAAGTTCTCTCCGCCACGGCGCCGCTTCCCAAC 320
 E I S P S V P D G C R L T F A Q V L S R H G A R F P T
 CCGGGTAAAGCGCCGCCATCTCCGCTGTCCTACCAAAATCAAAACCTCTGCCACCTGGTACGGTTCCGACTTTTCA 400
 P G K A A A I S A V L T K I K T S A T W Y G S D F Q
 TCATCAAGAACTACGACTATGTACTTGGCGTAGACCCTGACCGCGTTTCGGCGAGCAAGAAATGGTCAACTCCGGCATC 480
 F I K N Y D Y V L G V D H L T A F G E Q E M V N S G I
 AAGTTCTACAGCGCTACTCTCCCTCATCCAGACAGAAGACTCGGATACGCTCCCCTTCGTCCGCGCTCTGGCCAGGA 560
 K F Y Q R Y S S L I Q T E D S D T L P F V R A S G Q E
 ACGCGTCATCGCTCCGCCGAGAACTTCACCACCGGCTTCTACTCGGCCCTCTCAGCCGACAAGAACCCTCCTTCTCTCT 640
 R V I A S A E N F T T G F Y S A L S A D K N P P S S
 TACCAAGACCAGAAATGGTCATCATTTCTGAGGAGCCAACAGCCAACAACACCATGACCACGGCTCTGCCGCTCCTTT 720
 L P R P E M V I I S E E P T A N N T M H H G L C R S F
 GAAGATTCCACCACCGCGACCAAGCCCAAGCGGAATTCATCGCGCCACCTTCCCACCCATCACCGCCCGTCTCAACGC 800
 E D S T T G D Q A Q A E F I A A T F P P I T A R L N A
 CCAAGTTTCAAAGGCGTCACCTCTCCAACACCGACGTCCTATCACTAATGGACCTCTGCCCTTTGACACCGTCGCT 880
 Q G F K G V T L S N T D V L S L M D L C P F D T V A
 ACCCCCTTCTCCCTCACCACCACCTCTCCGTTTCTGGAGGCGGCAAGTTATCCCCCTTCTGCTCTCTTTTCACTGCC 960
 Y P L S S L T T T S S V S G G G K L S P F C S L F T A
 AGCGACTGGACAATCTACGATTACCTCCAGTCCCTAGGGAATACTACGGTTTCGGCCCCGGTAATCCCTAGCTGCCAC 1040
 S D W T I Y D Y L Q S L G K Y Y G F G P G N S L A A T
 CCAGGGGTAGGTACGTCAACGAGCTTATCGCCGCTTGATCCGTGCTCCCGTCGTAGATCACACGACGACCAACTCTA 1120
 Q G V G Y V N E L I A R L I R A P V V D H T T T N S
 CTCTTGATGGCGACGAAAAACGTTTCCGTTGAACAGAACGGTGTATGCGGATTTTCCCATGATAATGATATGATGAAT 1200
 T L D G D E K T F P L N R T V Y A D F S H D N D M M N
 ATCCTGACTGCTTTCGGGATATTCGAGCATATCAGTCCGATGGATAACACCACTATCCCGACCAACTATGGCCAGACAGG 1280
 I L T A L R I F E H I S P M D N T T I P T N Y G Q T G
 AGATACGGGGTGAAGGAAAGGATTTGTTCAAGGTTAGTTGGGCGGTGCCCTTTGCTGGGAGGGTGTACTTTGAGAAAA 1360
 D D G V K E R D L F K V S W A V P F A G R V Y F E K
 TGGTTTGTGATGCGGATGGGGATGGCAAGATTGATAGTGATGAGGCTCAGAAAGAGTTGGTGAGGATTTTGGTTAATGAT 1400
 M V C D A D G D G K I D S D E A Q K E L V R I L V N D
 CGGGTGATGAGATTGAATGGGTGTGATGCTGATGAACAGGGTAGGTGTGGATTGGAGAAGTTTGTGGAGAGTATGGAGTT 1520
 R V M R L N G C D A D E Q G R C G L E K F V E S M E F
 TCGGAGGAGAGGGGGGAGTGGGAGGAGAGGTGTTTTGTTTAGCTCTAGA
 A R R G G E W E E R C F V XbaI

Fig. 3

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1  ..MLILMIPLFSYLAASLRVLSPQPVS CDSP ELGYQCDQQTHTWGOYS 48
   | :|:|:|:|:| | | | . | . . | | | :| | :| | : . . . | | | | |
1  MTGLGVMVVMVGFLAIASLQSESR...PCDTPDLGFQCGTAISHFWGOYS 47

49 PFFSVPSEISPSVPDGCRLTFAQVLSRHGARFPTPGKAAAI SAVLTKIKT 98
   | :| | | | | | :| :| :| :| :| | | | | | | | | | | | :| | . . :| :| :| .
48 PYFSVPSELDASIPDDCEVTFAQVLSRHGARAPTLKRAASYVDLIDRIHH 97

99 SATWYGSD FQFIKNYDYVLGV DHLTAFGEQEMVNSGIKFYQRYSSLIQTE 148
   :| . . | | :| :| :| :| | | . | | . | | | | | | | | | | | | . | | . |
98 GAISYGPGYEFLRTYDYTLGADELTRTGQQMVNSGIKFYRRYRAL.... 143

149 DSDTLPFVRASGQERVIASAE NFTTG FYSALSADKNPPSSLPRP.EMVII 197
   . . . . :| | | | . | | :| | :| | | | | | | | | | | | :| . . . . | :| | :|
144 ARKSIPFVRTAGQDRVVHSAENFTQG FHSALLADRGSTVRPTLPYDMVVI 193

198 SEEPTANNTMH HGLCRSFED...STTGDQAQAEFIAATFPPITARLNAQG 244
   . | . . | | | | :| :| :| | . | | :| | | | | | | | . . . . . | | | | | :| | .
194 PETAGANNTLHNDLCTAFEEG PYSTIGDDAQD TYLSTFAGPITARVNA.N 242

245 FKGVTLSNTDVLSLMDLCPFDTVAYPLSSLTTSSVSGGGK.LSPFCSLF 293
   :. | . . | . . | . . | | | | | | | :| | | . | . . | . . . :| . | :| | | | | . | |
243 LPGANLTDADTV ALMDLCPFETVASSSSDPATADAGGGNGRPLSPFCRLF 292

294 TASDWTIYDY LQSLGKYYGFGPGNSLAATQGVGYVNELIARLIRAPVVDH 343
   . . | :| | | | | | | :| :| :| :| | | | . | :| | | | | :| | | :| | | | | . | | |
293 SESEWRAYDY LQSVGK WYGYPGNPLGPTQGVGVNELLARLAGVPVRDG 342

344 TTTNSTLDGDEKTFPLNRTVYADFSHDNDMMNILTALRIFEHISPMDNTT 393
   | . | | . | | | | | . :| | | | . | . :| | | | | | | | | | | . :| . | | :| :| :| :|
343 TSTNRTL DGDPRTFPLGRPLYADFSHDNDMMGV LGALGAYDGV PPLD... 389

394 IPTNYGQTGDDGVKERDLFKVSWAVPFAGRVYFEKMVC DADGDGKIDSD. 442
   . | :| :| . . | :| :| . | | | | | | | :| :| . | | | | | . :| :| :| :| :|
390 .....KTARRDPEELGGYAASWAVPFAARIYVEKMRCSGGGGGGGGGEG 433

443 ..EAQKELVRILVNDRVMRLNGCDADEQGRCGLEKFVESMEFARRGGGEWE 490
   | :. | :| | | :| | | | | | | | . | . | :| | | . | . | | :| :| :| | | | | . | . | :
434 RQEKDEEMVRVLVNDRVMTLKGCGADERGMCTLERFIESMAFARGNGKWD 483

491 ERCFV 495
   | | .
484 L.CFA 487

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Fig. 4A

Peniophora numbers	1				37
Alignment numbers	1				50
P_involtus_A1ML	FGFVALACLL	SLSEVLATSV	P.....KNT	APTFPIPESE
P_involtus_A2	.....MH	LGFVTLACLI	HLSEVFASV	P.....RNI	APKFSIPESE
T_pubescens	.....	MAFSILASLL	FVCYAYARAV	PRAHIPLRDT	SACLDVTRDV
A_pediades	.....	MSLFIGGCLL	VFLQASAYGG	VVQATFVQPF	.....FPPQI
P_lycii	.....MV	SSAFAPSILL	SLMSSLALST	QFSF.....V	AAQLPIPAQN
A_fumigatus	.....MVT	TFLLSAAYLL	.SGRVSAAPS	SAGSKSCDTV	DLGYQCSPAT
consphyA	.....MGVF	VVLLSIATLF	GSTSGTALGP	RGNSHSCDTV	DGGYQCFPEI
A_nidulans	.....MAFF	TVALSLYYLL	.SRVSAQAP	VVQNHSCNTA	DGGYQCFPNV
A_ficuum_NRRL3135	.....MGVS	AVLLPLYLLS	GVTSGLAVPA	SRNQSSCDTV	DQGYQCFSET
A_terreus	.....MGFL	AIVLSVALLF	RSTSGTPLGP	RGKHSDCNSV	DHGYQCFPEL
T_thermo	.....MSLL	LLVLSGGLVA	LYVS...RNP	HVDSHSCNTV	EGGYQCRPEI
T_lanuginosa	MAGIGLGSFL	VLLLQFSALL	TASPAIPFFW	RKKHPNVD..	.....I
M_thermophila	.....MTGL	GVMVMVGFL	AIASL.....	QSESRPCDTP	DLGFQCGTAI
C_foecundissimum	.....ML	ILMIPLFSYL	AAASL	RVLSPSCDSP	ELGYQCDQQT
				QPV	
	38				83
	51				100
P_involtus_A1	QRNWSPYSPY	FPLAEYKA..	..PPAGCQIN	QVNIIQRHGA	RFPTSGATTR
P_involtus_A2	QRNWSPYSPY	FPLAEYKA..	..PPAGCEIN	QVNIIQRHGA	RFPTSGAATR
T_pubescens	QQSWSMYSY	FPAATYVA..	..PPASCQIN	QVHIIQRHGA	RFPTSGAAKR
A_pediades	QDSWAAATPY	YPVQAYTP..	..PPKDCKIT	QVNIIQRHGA	RFPTSGAGTR
P_lycii	TSNWGPYDPF	FPVEPYAA..	..PPEGCTVT	QVNLIQRHGA	RWPTSGARSR
A_fumigatus	SHLWGQYSPF	FSLEDELSVS	SKLPKDCRIT	LVQVLSRHGA	RYPTSSKSKK
consphyA	SHLWGQYSPY	FSLEDESAIS	PDVPPDCRVT	FVQVLSRHGA	RYPTSSKSKA
A_nidulans	SHVWGQYSPY	FSIEQESAIS	EDVPHGCEVT	FVQVLSRHGA	RYPTESKSKA
A_ficuum_NRRL3135	SHLWGQYAPF	FSLANESVIS	PEVPAGCRVT	FAQVLSRHGA	RYPTDSKGGK
A_terreus	SHKWGLYAPY	FSLQDESPFP	LDVPEDCHIT	FVQVLARHGA	RSPTHSKTKA
T_thermo	SHSWGQYSPF	FSLADQSEIS	PDVPQNCKIT	FVQLLSRHGA	RYPTSSKTEL
T_lanuginosa	ARHWGQYSPF	FSLAEVSEIS	PAVPKGCRCVE	FVQVLSRHGA	RYPTAHKSEV
M_thermophila	SHFWGQYSPY	FSVP..SELD	ASIPDDCEVT	FAQVLSRHGA	RAPTLKRAAS
	THTWGQYSPF	FSVP SEIS	PSVPDGCRLT	FAQVLSRHGA	RFPTPGKAAA
	84				133
	101				150
P_involtus_A1	IKAGLTKLQG	VQNFTDAKFN	FIKSFKYDLG	NSDLVPFGAA	QSFDAGQEAF
P_involtus_A2	IKAGLSKLQS	VQNFTDPKFD	FIKSFTYDLG	TSDLVPFGAA	QSFDAGLEV
T_pubescens	IQTAVAKLKA	ASNYTDPLLA	FVTNYTYSLG	QDSLVELGAT	QSSEAGQEAF
A_pediades	IQAQVKKLQS	AKTYTDPRLD	FLTNYTYTLG	HDDLVPFGAL	QSSQAGEETF
P_lycii	QVAQVAKIQM	ARPFTDPKYE	FLNDFVYKFG	VADLLPFGAN	QSHQTGTDY
A_fumigatus	YKKLVTAIQA	NATDFKKGKFA	FLKTYNYTLG	ADDLTPFGEQ	QLVNSGIKFY
consphyA	YSALIEAIQK	NATAFKGKYA	FLKTYNYTLG	ADDLTPFGEN	QMVNSGIKFY
A_nidulans	YSGLIEAIQK	NATSFWGQYA	FLESYNYTLG	ADDLTIFGEN	QMVDSGAKFY
A_ficuum_NRRL3135	YSALIEEIQQ	NATTFDGKYA	FLKTYNYSLG	ADDLTPFGEQ	ELVNSGIKFY
A_terreus	YAATIAAIQK	SATAFPKGKYA	FLQSYNYSLD	SEELTPFGRN	QLRDLGAQFY
T_thermo	YSQLISRIQK	TATAYKGYA	FLKDYRYQLG	ANDLTPFGEN	QMIQLGIKFY
T_lanuginosa	YAEELLQRIQD	TATEFKGDFA	FLRDYAYHLG	ADNLTRFGEE	QMMESGRQFY
M_thermophila	YVDLIDRIHH	GAISYGPGE	FLRTYDYTLG	ADELTRTGQQ	QMVNSGIKFY
	ISAVLTKIKT	SATWYGSDFQ	FIKNYDYVLG	VDHLTAFGEQ	EMVNSGIKFY

Fig. 4B

	134				176
	151				200
P_involtus_A1	ARYSKLVSKN	NLPFIRADGS	DRVVDSATNW	TAGFASA...	....SHNTVQ
P_involtus_A2	ARYSKLVSSD	NLPFIRSDGS	DRVVDATATNW	TAGFASA...	....SRNAIQ
T_pubescens	TRYSSLVSAD	ELPFVRASGS	DRVVATANNW	TAGFALA...	....SSNSIT
A_pediades	QRYSFVLSKE	NLPFVRASSS	NRVVDSATNW	TEGFSAA...	....SHHVLN
P_lycii	TRYSTLFEGG	DVPFVRAAGD	QRVVDSSTNW	TAGFGDA...	....SGETVL
A_fumigatus	QRYKAL.ARS	VVPFIRASGS	DRVIASGEKF	IEGFQQAKLA	DPGA.TNRAA
consphyA	RRYKAL.ARK	IVPFIRASGS	DRVIASAEKF	IEGFQSAKLA	DPGSQPHQAS
A_nidulans	RRYKNL.ARK	NTPFIRASGS	DRVVASAEKF	INGFRKAQLH	DHGS..KRAT
A_ficuum_NRRL3135	QRYESL.TRN	IVPFIRSSGS	SRVIASGKKF	IEGFQSTKLL	DPRAQPGQSS
A_terreus	ERYNAL.TRH	INPFVRATDA	SRVHESAEKF	VEGFQTARQD	DHHANPHQPS
T_thermo	NHYKSL.ARN	AVPFVRCSGS	DRVIASGRLF	IEGFQSAKVL	DPHSDKHDAP
T_lanuginosa	HRYREQ.ARE	IVPFVRAAGS	ARVIASAEFF	NRGFQDAKDR	DPRSNDQAE
M_thermophila	RRYRAL.ARK	SIPFVRTAGQ	DRVVHSAENF	TQGFHSALLA	DRGSTVRPTL
	QRYSSLIDSD	TLPFVVRASGQ	ERVIASAENF	TTGFYSALSA	DKNPPSSSLPR
	QTE				
	177				217
	201				250
P_involtus_A1	PKLNLILPQT	G..NDTLEDN	MCPAAGD...	...SDPQVNA	WLAVAFPSIT
P_involtus_A2	PKLDLILPQT	G..NDTLEDN	MCPAAGE...	...SDPQVDA	WLASAFPSVT
T_pubescens	PVLSVIISEA	G..NDTLDDN	MCPAAGD...	...SDPQVNO	WLAQFAPPMT
A_pediades	PILFVILSES	L..NDTLDDA	MCPNAGS...	...SDPQTGI	WTSIYGTPIA
P_lycii	PTLQVVLQEE	G..NCTLCNN	MCPNEVD...	...GD.ESTT	WLGVFAPNIT
A_fumigatus	PAISVIIPES	ETFNNTLDHG	VCTKFEA...	SQLGDEVAAN	FTALFAPDIR
consphyA	PVIDVIIPEG	SGYNNTLDHG	TCTAFED...	SELGDDVEAN	FTALFAPAIR
A_nidulans	PVVNVIIPEI	DGFNNTLDHS	TCVSFEN...	DERADEIEAN	FTAIMGPPIR
A_ficuum_NRRL3135	PKIDVVISEA	SSSNNTLDPG	TCTVFED...	SELADTVEAN	FTATFVPSIR
A_terreus	PRVDVAIPEG	SAYNNTLEHS	LCTAFES...	STVGDDAVAN	FTAVFAPAIA
T_thermo	PTINVIIIEG	PSYNNTLDTG	SCPVFED...	SSGGHDAQEK	FAKQFAPAIL
T_lanuginosa	PVINVIIIEE	TGSNNTLDGL	TCPAAEE...	AP.DPTQPAE	FLQVFGPRVL
M_thermophila	PYDMVVIPE	AGANNTLHND	LCTAFEEGPY	STIGDDAQDT	YLSTFAGPIT
	P.EMVIIIEE	PTANNTMHG	LCRSFED	STTGDQAQAE	FIAATFFPPIT
	218				252
	251				300
P_involtus_A1	ARLNAAAPSV	NLTDDAFNL	VSLCAFLTVS	KEKK.....	.....S
P_involtus_A2	AQLNAAAPGA	NLTDADAFNL	VSLCPFMTVS	KEQK.....	.....S
T_pubescens	ARLNAGAPGA	NLTDTDTYNL	LTLCPFETVA	TERR.....	.....S
A_pediades	NRLNQAPGA	NITAADVSNL	IPLCAFETIV	KETP.....	.....S
P_lycii	ARLNAAAPSA	NLSDSDALT	MDMCPFDTL	SGNA.....	.....S
A_fumigatus	ARAEKHLPGV	TLTDEDVVS	MDMCSFDTVA	RTSD..ASQ.	.....LS
consphyA	ARLEADLPGV	TLTDEDVVYL	MDMCPFETVA	RTSD..ATE.	.....LS
A_nidulans	KRLNDLPGI	KLTNENVIYL	MDMCSFDTMA	RTAH..GTE.	.....LS
A_ficuum_NRRL3135	QRLNDLPGV	TLTDEVTYL	MDMCSFDTIS	TSTV..DTK.	.....LS
A_terreus	QRLNDLPGV	QLSTDDVNL	MAMCPFETVS	LTDD..AHT.	.....LS
T_thermo	EKIKDHLPGV	DLAVSDVPYL	MDLCPFETLA	RNHT..DT..	.....LS
T_lanuginosa	KKITKHMPGV	NLTLEDVPLF	MDLCPFDTVG	SDPVLFPQ.	.....LS
M_thermophila	ARVNANLPGA	NLTDADTVAL	MDLCPFETVA	SSSSDPATAD	AGGGNGRPLS
	ARLNAGFKGV	TLSNTDVL	MDLCPFDTVA	YPLSSLTTTS	SVSGGGK LS
	Q				

Fig. 4C

	253				300
	301				350
P_involtus_A1	DFCTLFEGIP	GSFEAFAYGG	DLDKFYGTGY	GQELGPVQGV	GYVNELIARL
P_involtus_A2	DFCTLFEGIP	GSFEAFAYAG	DLDKFYGTGY	GQALGPVQGV	GYINELLARL
T_pubescens	EFCDIYEELQ	AE.DAFAYNA	DLDKFYGTGY	GQPLGPVQGV	GYINELIARL
A_pediades	PFCNLFT..P	EEFAQFEYFG	DLDKFYGTGY	GQPLGPVQGV	GYINELLARL
P_lycii	PFCDLFT..A	EEYVSYEYYY	DLDKYYGTGP	GNALGPVQGV	GYVNELLARL
A_fumigatus	PFCQLFT..H	NEWKKYNYLQ	SLGKYYGYGA	GNPLGPAQGI	GFTNELIARL
consphyA	PFCALFT..H	DEWROYDYLQ	SLGKYYGYGA	GNPLGPAQGV	GFANELIARL
A_nidulans	PFCAIFT..E	KEWLQYDYLQ	SLSKYYGYGA	GSPLGPAQGI	GFTNELIARL
A_ficuum_NRRL3135	PFCDLFT..H	DEWINYDYLQ	SLKKYYGHGA	GNPLGPTQGV	GYANELIARL
A_terreus	PFCDLFT..A	TEWTQYNYLL	SLDKYYGYGG	GNPLGPVQGV	GWANELMARL
T_thermo	PFCALST..Q	EEWQAYDYYQ	SLGKYYGNNG	GNPLGPAQGV	GFVNELIARM
T_lanuginosa	PFCHLFT..A	DDWMAYDYYY	TLDKYYSHGG	GSAFGPSRGV	GFVNELIARM
M_thermophila	PFCRLFS..E	SEWRAYDYLQ	SVGKWWGYGP	GNPLGPTQGV	GFVNELLARL
	PFCSLFT A	SDWTIYDYLQ	SLGKYYGFGP	GNSLAATQGV	GYVNELIARL
	301				349
	351				400
P_involtus_A1	TNS.AVRDNT	QTNRTLDASP	VTFPLNKTFY	ADFSHDNLMV	AVFSAMGLFR
P_involtus_A2	TNS.AVNDNT	QTNRTLDAAP	DTFPLNKTMV	ADFSHDNLMV	AVFSAMGLFR
T_pubescens	TAQ.NVSDHT	QTNSTLDSSP	ETFPLNRTLY	ADFSHDNQMV	AIFSAMGLFN
A_pediades	TEM.PVRDNT	QTNRTLDSSP	LTFPLDRSIY	ADLSHDNQMI	AIFSAMGLFN
P_lycii	TGQ.AVRDET	QTNRTLDSDP	ATFPLNRTFY	ADFSHDNTMV	PIFAALGLFN
A_fumigatus	TRS.PVQDHT	STNSTLVSNP	ATFPLNATMY	VDFSHDNSMV	SIFFALGLYN
consphyA	TRS.PVQDHT	STNHTLDSNP	ATFPLNATLY	ADFSHDNSMI	SIFFALGLYN
A_nidulans	TQS.PVQDNT	STNHTLDSNP	ATFPLDRKLY	ADFSHDNSMI	SIFFAMGLYN
A_ficuum_NRRL3135	THS.PVHDDT	SSNHTLDSSP	ATFPLKSTLY	ADFSHDNGII	SILFALGLYN
A_terreus	TRA.PVHDHT	CVNNTLDASP	ATFPLNATLY	ADFSHDSNLV	SIFWALGLYN
T_thermo	THS.PVQDYT	TVNHTLDSNP	ATFPLNATLY	ADFSHDNTMT	SIFAALGLYN
T_lanuginosa	TGNLPVKDHT	TVNHTLDDNP	ETFPLDAVLY	ADFSHDNTMT	GIFSAMGLYN
M_thermophila	A.GVPVRDGT	STNRTLDGDP	RTFPLGRPLY	ADFSHDNDMM	GVLGALGAYD
	I RAPVVDHT	TTNSTLDGDE	KTFPLNRTVY	ADFSHDNDMM	NILTALRIFE
	350			383	
	401				450
P_involtus_A1	QPAPLSTSV	NPWR.....T	WRTSSLVPFS	GRMVVERLSC	.....
P_involtus_A2	QSAPLSTSTP	DPNR.....T	WLTSSVVPFS	ARMAVERLSC	.....
T_pubescens	QSAPLDPTTP	DPAR.....T	FLVKKIVPFS	ARMVVERLDC	.....
A_pediades	QSSPLDPSFP	NPKR.....T	WVTSRLTPFS	ARMVTERLLC	QRDGTGSGGP
P_lycii	ATA.LDPLKP	DENR.....L	WVDSKLV PFS	GHMTVEKLAC	.....
A_fumigatus	GTEPLSRTSV	ESAKE..LDG	YSASWVVPFG	ARAYFETMQC	.....
consphyA	GTAPLSTTSV	ESIEE..TDG	YSASWTV PFG	ARAYVEMMQC	.....
A_nidulans	GTQPLSMDSV	ESIQE..MDG	YAASWTV PFG	ARAYFELMQC	.....
A_ficuum_NRRL3135	GTKPLSTTTV	ENITQ..TDG	FSSAWTV PFA	SRLYVEMMQC	.....
A_terreus	GTAPLSQTSV	ESVSQ..TDG	YAAAWTV PFA	ARAYVEMMQC	.....
T_thermo	GTAKLSTTEI	KSIEE..TDG	YSAAWTV PFG	GRAYIEMMQC	.....
T_lanuginosa	GTKPLSTSKI	QPPTGAAADG	YAASWTV PFA	ARAYVELLRC	ETETSSEEEE
M_thermophila	GVPPLDKTAR	RDPEE..LGG	YAASWAVPFA	ARIYVEKMRC	SGGGGGGGGG
	HISPMQTDG	DGVKE RDL	FKVSWAVPFA	GRVYFEKMVC	DADGDGKIDS
	NTTIPTNYG				

Fig. 4D

		384		425
	451			500
P_involtus_A1	.....FGT	TKVRVLVQDQ	VQPLEFCGGD	RNGLCTLAKF VESQTFARSD
P_involtus_A2	.....AGT	TKVRVLVQDQ	VQPLEFCGGD	QDGLCALDKF VESQAYARSG
T_pubescens	.....GGA	QSVRLLVNDA	VQPLAFCGAD	TSGVCTLD AF VESQAYARND
A_pediades	SRIMRNGNVQ	TFVRILVNDA	LQPLKFCGGD	MDSLCTLEAF VESQKYARED
P_lycii	.....SGK	EAVRVLVNDA	VQPLEFCGG.	VDGVCELSAF VESQTYAREN
A_fumigatus	K..S...EKE	PLVRALINDR	VVPLHGCDVD	KLGRCKLNDF VKGLSWARSG
consphyA	Q..A...EKE	PLVRVLVNDR	VVPLHGCAVD	KLGRCKRDDF VEGLSFARSG
A_nidulans	E.....KKE	PLVRVLVNDR	VVPLHGCAVD	KFGRCTLDDW VEGLN FARSG
A_ficuum_NRRL3135	Q..A...EQA	PLVRVLVNDR	VVPLHGCPVD	ALGRCTRDSF VRGLSFARSG
A_terreus	R..A...EKE	PLVRVLVNDR	VMPLHGCPVD	KLGRCKRDAF VAGLSFAQAG
T_thermo	D..D...SDE	PVVRVLVNDR	VVPLHGCEVD	SLGRCKRDDF VRGLSFARQG
T_lanuginosa	E..G...EDE	PFVRVLVNDR	VVPLHGCRVD	RWGRCCRDEW IKGLTFARQG
M_thermophila	E..GRQEKDE	EMVRVLVNDR	VMTLKGCAD	ERGMCTLERF IESMAFARGN
	D	EAQK	ELVRILVNDR	VMRLNGCDAD EQGRCGLEKF VESMEFARRG
	426	439		
	501	514		
P_involtus_A1	GAGDFEKCFA	TSA.		
P_involtus_A2	GAGDFEKCLA	TTV.		
T_pubescens	GEGDFEKCFA	T...		
A_pediades	GQGD FEKCFD	....	
P_lycii	GQGDFAKCGF	VPSE		
A_fumigatus	..GNWGE CFS	....	
consphyA	..GNWAE CFA	*...		
A_nidulans	..GNWKT CFT	L...		
A_ficuum_NRRL3135	..GDWAE CFA	....	
A_terreus	..GNWAD CF.	....	
T_thermo	..GNWEG CYA	ASE.		
T_lanuginosa	..GHWDR CF.	....	
M_thermophila	..GKWDL CFA	....	
	GEWEECFV			
	R			